

PATENT ABSTRACTS OF JAPAN

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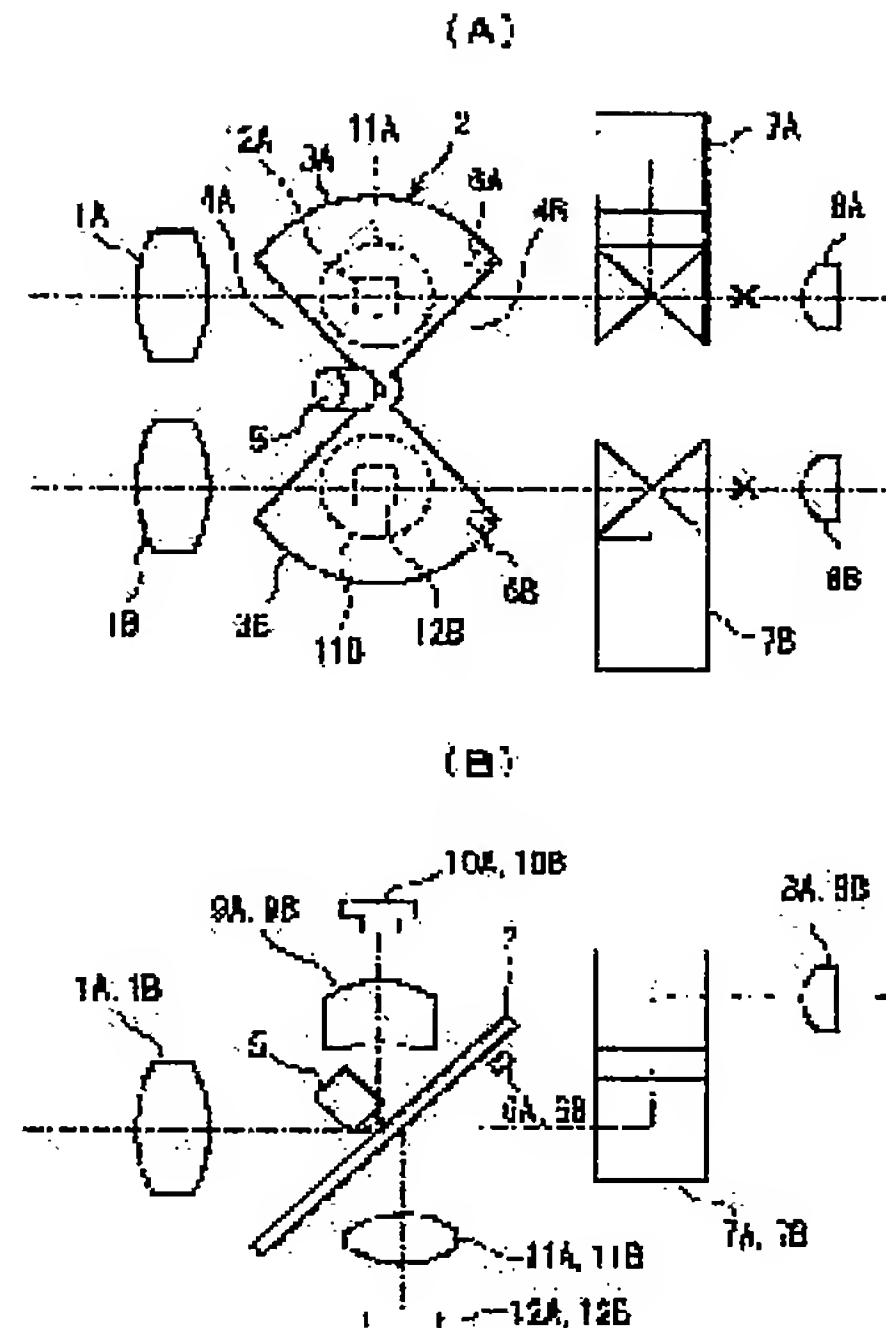
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(54) ELECTRONIC BINOCULARS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide electronic binoculars which has its constitution made small-sized on the whole and also has a photographing function and a reproducing function inside.

SOLUTION: A mirror unit 2 constituted by coupling a couple of sectorial both-surface mirror parts 3A and 3B symmetrically in one body is arranged on the optical paths between a couple of objectives 1A and 1B and erect prisms 7A and 7B so that the mirror surfaces of mirror parts are oblique at 45° to the optical paths and rotatable around the coupling parts; and CCD image pickup elements 10A and 10B are arranged on optical paths reflected by the top surfaces of the mirror parts and LCD monitors 12A and 12B are arranged at the opposite positions of the CCD image pickup elements from the optical paths about the optical paths. Then passage parts 4A and 4B other than the mirror parts of the mirror unit are positioned on the optical paths from the objectives to make a binoculars observation and the mirror parts are positioned on the optical paths to enable photography by an image pickup element and a display observation of picked up images on a display monitor.



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[0024]

On the other hand, the display screens of LCD monitor 11A and 11B displaying shot images, etc. shot by CCD image pick-up devices 10A and 10B are configured in such a manner that it is reflected by lower surface mirrors of mirror members 3A and 3B of rotating mirror unit 2 via monitor lenses 12A and 12B, and can be observed via erecting prisms 7A and 7B, and eyepiece lenses 8A and 8B.

[0036]

Moreover, according to the present invention, as described before, in the case of the disc-shape mirror unit, by rotating it at a high speed, observation by the binoculars and observation of the displays of LCD display units 56A and 56B can be intermittently repeated at a short cycle, and the disc-shape mirror unit is configured such that an image like the one superimposing both images can be observed, so that the calendar and/or character information as binoculars information, not the shot images in order to execute the superimposed display by LCD display units 56A and 56B, are incorporated into CPU 56.

[0037]

CPU 65 is provided with input directive member 66, and input directive member 66 is provided with various kinds of mode buttons, a release button, ON/OFF button of the LCD display member, and a switch button switching over between a continuous video shooting and a still picture shooting upon shooting, etc. As a mode directed by the mode button, there are provided an observation mode, an image taking mode of the shooting function member, a playback display mode of a shot image, a mode for observing the shot image or other superimposed information display, etc., with which a typical binoculars is provided

[0038]

When the rotating mirror unit is used as a mirror unit, the mode of observing the superimposed information display is a mode

such that desired information can be observed by causing the desired information to be superimposed on an observation image of the binoculars, and be displayed by rotating the rotational mirror unit faster. As information to be superimposed/displayed, there are the information about the calendar and character, the residual power capacity, warning information, and a display of a number of frames capable of being shot (memory capacity), and further it is also possible to cause information comparable to the subject of the binoculars watching, that is, information about birds picture books upon bird watching, and information about other binoculars observation images obtained via the communication means of the electronic binoculars to be superimposed/displayed as comparable check information.